

REMARKS

Statement of Substance of Interview

A telephonic interview was conducted on June 4, 2007 between Examiner Godbold of the U.S.P.T.O. and the Applicant's representative, S. Stuart Lee and Anand B. Ramakrishnan.

The Applicant conducted a telephonic interview with the Examiner on the 35 U.S.C. § 112, second paragraph, rejection of claim 8 on June 4, 2007. The Examiner alleged claim 8 was unclear regarding the recited "pre-determined threshold." However, the Examiner commented that resolving the alleged ambiguity in the "pre-determined threshold" would clarify "if the total bit allocation of the frame is changed or just the global gain" (Office Action, page 2, paragraph 5).

Applicant respectfully submits that claim 8 complies with § 112, second paragraph, and further submits the following.

It is respectfully submitted that the instant STATEMENT OF SUBSTANCE OF INTERVIEW complies with the requirements of 37 C.F.R. § 1.2 and 1.133 and M.P.E.P. § 713.04.

Summary

Claim 1-17 are all the claims pending in the application. Claims 4, 5, 6, 7, and 11-14. have been cancelled. Claims 8-10 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 9 and 10 are rejected as they are dependent on claim 8. Claims 15 and 17 are rejected under 35 U.S.C. § 102 that form the basis for the rejection under this section made in this Office Action. Claims 4 and 5 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,950,794 (hereinafter, "Subramaniam"). Claims 1-3 and 15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Subramaniam, in view of U.S. Patent No. 6,697,775 (hereinafter, "Kawahara"). Claims 6, 7, 11-14, 16 and 17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Subramaniam in view of Kawahara as applied to claim 1, and further in view of Najafzadeh (Perceptual Bit allocation of Allocation for Low Rate coding of Narrowband Audio).

Rejection of claim 8-10 under §112, second paragraph

The Examiner rejects claims 8-10 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. In particular, the Examiner alleges “the predetermined threshold” in line 24 is unclear (Office Action, page 2). The Examiner further alleges that it is unclear if the total bit allocation of the frame is changed or just the global gain. The Applicant respectfully disagrees.

The Applicant respectfully submits that claim 8 complies with 35 U.S.C. § 112, second paragraph.

To assist the Examiner in understanding an exemplary embodiment of the present invention Applicant directs the Examiner to the following paragraphs regarding “pre-determined threshold,” “bit-rate,” and “scale factor band gain” in an exemplary embodiment of the invention.

Paragraphs [0041] and [0051] disclose:

[0041] The adjustment of the scale factor band gain may result in the shaping of the quantization noise as indicated by arrows 530 or 540. However, the scale factor band gain is increased to a limit. Thus, in step S470, a determination is made whether the quantization noise is shaped to fall within the quantization noise threshold 510 only when the scale factor band gain is increased to be above a predetermined threshold value. If the determination is made that the quantization noise is shaped to fall within the quantization noise threshold 510 only when the scale factor band gain is increased to be above the predetermined threshold value, in step S490, a determination is made that a desired sound quality is not satisfied at the given bit rate and the shaping of the quantization noise ends using the stored scale factors. If not, a next step is performed.

* * *

[0051] The quantization noise attenuator 830 attenuates quantization noise in all the frequency bands. In other words, when a predetermined bit rate is determined to compress an audio signal, the quantization noise attenuator 830 calculates a number of bits corresponding to the predetermined bit rate, adjusts the number of bits by adjusting a common gain until a number of bits smaller

than the calculated number of bits is used for the compression, and adjusts a degree to which quantization noise is attenuated in each frequency band by adjusting a scale factor band gain. Details of this are as described with reference to FIG. 4.

With the above, the Applicant respectfully submits that the “pre-determined threshold” in claim 8 compiles with 35 U.S.C. § 112, second paragraph.

Therefore, claim 8 and claims 9 and 10 which depend from claim 8, are patentable.

Rejection of claims 15 and 17 under §101

The Examiner rejects claims 15 and 17 under 35 U.S.C. § 101 because the Examiner alleges the claimed invention is directed to non-statutory subject matter. The Examiner specifically alleges claims 15 and 17 claim a computer-readable recording medium that is defined in the specification to include carrier waves.

The Applicant respectfully submits that claims 15 and 17 complies with § 101.

Rejection of claims 4 and 5 under §102(e) as being anticipated by Subramanian

Applicant cancels claims 4 and 5 without prejudice or disclaimer. Therefore, the present rejection of claims 4 and 5 is moot.

Rejection of claims 1-3 and 15 under §103(a) over Subramaniam in view of Kawahara

The Examiner rejects claims 1-3 and 15 under 35 U.S.C. § 103(a) as being unpatentable over Subramanian in view of Kawahara. The Applicant respectfully traverses the rejection.

Claim 1 recites, *inter alia*:

“wherein differences between the predetermined quantization noise threshold and the quantization noise energy of the quantized MDCT coefficients are relatively large.”

The Examiner alleges the bit allocation method where scale band factors are used to shape the noise in the subbands and that this would inherently attenuate the quantization noise in bands where the quantization noise is higher than the noise threshold (Office Action, page 6).

However, attenuating the quantization noise in bands where the quantization noise is higher than the noise threshold **does not necessarily disclose attenuation wherein the differences**

between the predetermined quantization noise threshold and the quantization noise energy of the quantized MDCT coefficients are relatively large. Attenuating a value higher than a threshold is different than attenuating a value such that differences between two other values are large. Therefore, claim 1 is patentable.

Claims 2 and 3 depend from claim 1 and are patentable for at least the same reasons as claim 1.

Claim 15 recites analogous limitations as claim 1 and should be patentable at least for analogous reasons.

Rejection of claims 6, 7, 11-14, 16 and 17 under §103(a) over Subramaniam in view of Kawahara as applied to claim 1, and further in view of Najafzadeh

The Examiner rejects claims 6, 7, 11-14, 16, and 17 under 35 U.S.C. § 103(a) as being unpatentable over Subramaniam in view of Kawahara as applied to claim 1, and further in view of Najafzadeh. Claims 6-7, and 11-14 are cancelled without prejudice or disclaimer and as such their rejection is moot.

The Applicant respectfully traverses the rejection of claims 16, and 17.

Claim 16 is patentable for at least the same reasons as claim 1 because of its dependency on claim 1.

Claim 17 depends from claim 15 and is patentable for at least the same reasons as claim 15.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

/ Seok-Won Stuart Lee /

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

Seok-won Stuart Lee
Limited Recognition No. L0212

WASHINGTON OFFICE
23373
CUSTOMER NUMBER

Date: July 11, 2007

FILING RECEIPT
PLEASE DATE STAMP AND RETURN TO US - BOX 235X

In re application of

Tae-gyu CHANG, et al.

Appln. No.: **10/720,762**

Group Art Unit: 2626

Confirmation No.: 2773

Examiner: Douglas GODBOLD

Filed: November 25, 2003

For: QUANTIZATION NOISE SHAPING METHOD AND APPARATUS

PAPER(S) FILED ENTITLED:

1. Amendment Under 37 C.F.R. §1.111

SUGHRUE MION, PLLC

DOCKET NO.: Q77359

Telephone: (202) 293-7060

ATTORNEY/SEC: SSL/ABR/clf

Faxsimile: (202) 293-7860

Date Filed: July 12, 2007

WASHINGTON OFFICE

23373

CUSTOMER NUMBER